151.08: Track Inspection

(1) Inspections.
(a) All inspections must be made according to the schedule set out in 220 C.M.R. 151.08(2), by a person designated under 220 C.M.R. 151.08(4).
(b) Each inspection must be made on foot or by riding over the track in a vehicle at a speed that allows the person making the inspection to visually inspect the track structure for compliance with 220 C.M.R. 151.00. However, mechanical, electrical and other track inspection devices may be used to supplement visual inspection. If a vehicle is used for visual inspection, the speed of the vehicle may not be more than five miles per hour when passing over track crossings, highway crossings or turnouts.
c) If the person making the inspection finds a deviation from the inspection requirements the inspector shall immediately initiate remedial action.

(2) Schedule for Track.
(a) Each track inspection must be made according to the following schedule:

TYPE OF TRACK	REQUIRED FREQUENCY
Light Rail Track	Three times per week with at least one calendar day interval between inspections
Rapid Transit Lines-main track and sidings with posted operating speeds of 40 mph or less	Weekly with at least three calendar days interval between inspections, or before use, if track is used less than once a week, or twice weekly with at least one calendar day interval between inspections if track carries passenger trains or carried more than ten million gross tons of traffic during preceding calendar year.
All Rapid Transit Lines with posted operating speed greater than 40 mph	Twice weekly with at least one calendar day interval between inspections.

(b) In addition to 220 C.M.R. 151.08(2)(a), any track undergoing or awaiting repair that has a speed restriction placed on it shall be inspected at a frequency that will insure safe operations at all times.
(c) Each switch, turnout, and track crossing must be inspected on foot in accordance with the provisions of the MBTA M.O.W. Division Book of Policies and Standard Operating Procedures, System Certification and Switch Certification Procedures.
(d) In the event of fire, flood, severe storm, or other occurrence which might have damaged track structure, a special inspection must be made of the track involved as soon as possible after the occurrence.
(e) The Department of Telecommunications and Energy may require inspections at more frequent intervals in areas of dense traffic, high operating speed or questionable physical conditions.

(3) Schedule for Rail Inspection.

(a) In addition to 220 C.M.R. 151.08(2)(a), at least once a year a continuous search for internal rail defects shall be conducted in accordance with the provisions of the MBTA M.O.W. Division Book of Policies and Standard Operating Procedures, Rail Maintenance, Inspection and Testing Procedures.

(b) Inspection equipment, including ultrasonic rail testing equipment, must be capable of detecting defects between joint bars, in the area enclosed by joint bars.

(c) Each defective rail must be marked with highly visible marking on both sides of the web and base.

(4) Personnel.

(a) The Transit Authority shall designate qualified persons to supervise restorations and renewals of track under traffic conditions. Each person designated must have:

1. Experience/Education
   a. One year of supervisory experience in railroad track maintenance, or
   b. A combination of supervisory experience in track maintenance and training from a course in track maintenance, or
   c. A college level educational program related to track maintenance.
2. Ability to:
   a. Understand inspection requirements
   b. Detect deviations from the inspection requirements
   c. Prescribe appropriate remedial action to correct or safely compensate for deviations
   d. Procure written authorization from the Transit Authority to prescribe remedial actions to correct or safely compensate for any deviations from the inspection requirements

(b) The Transit Authority shall designate qualified persons to inspect track for defects. Each person designated must have:

1. Experience/Education
   a. At least one year of experience in track inspection, or
   b. A combination of experience in track inspection and training from a course in track inspection or from a college level educational program related to track inspection.
2. Ability to:
   a. Understand inspection requirements
   b. Detect deviations from the inspection requirements
   c. Prescribe appropriate remedial action to correct or safely compensate for deviations
   d. Procure written authorization from the Transit Authority to prescribe remedial actions to correct or safely compensate for any deviations from the inspection requirements pending review by a qualified person designated under 220 C.M.R. 151.08(4)(a).

(c) Personnel Records of designees under 220 C.M.R.151.08(4)(a) and (b) shall show:

1. The basis for each designation
2. The records of inspections made by each person designated.
3. Records must be kept available for inspection or copying by the Department of Telecommunications and Energy.

(5) Records/Reports.

(a) The Transit Authority shall keep a record of each track and rail inspection required to be performed.
(b) The Transit Authority shall designate a location where each original record shall be maintained for at least one year after the track inspection covered by the track inspection record. The Transit Authority shall retain a rail inspection record for at least two years after the rail inspection and for one additional year after remedial action is taken.
(c) Track Inspection Records and Rail Inspection Records shall be:
1. Prepared on the day the inspection is made
2. Signed by the person making the inspection.
(d) Inspection Records must specify:
1. The track or rail inspected
2. The date of inspection
3. Location of any deviation
4. Nature of any deviation from the established track standards.
5. Remedial action taken by the person making the inspection
(e) Records must be kept available for inspection or copying by the Department of Telecommunications and Energy.

151.09: Track Maintenance

(1) Unless otherwise structurally supported, all track must be supported by ballast material which will:
(a) Transmit and distribute the load of the track and railroad rolling equipment to the subgrade
(b) Restrain the track laterally, longitudinally, and vertically under dynamic loads imposed by railroad rolling equipment and thermal stress exerted by the rails
(c) Provide adequate drainage for the track
(d) Maintain proper track crosslevel, surface, and alignment.

(2) Crossties shall be made of a material to which rail can be securely fastened.
(a) Each 39 foot segment of track shall have a sufficient number of crossties which in combination provide effective support that will maintain gage, surface, and alignment.
(b) The minimum number and type of crossties specified in 220 CMR 151.09(3) effectively distributed to support the entire segment; and at least one crosstie of the type specified in 220 C.M.R. 151.09(3) that is located at a joint location.
(c) Each 39 foot segment of track shall have the minimum number and type of crossties as indicated in the following table:

MAXIMUM TRACK SPEED	MINIMUM NUMBER OF TIES	
	Tangent Track	Curved Track*
15 miles per hour	5	6
25 miles per hour	8	9
50 miles per hour	10	12

* Indicates radius < 1000'

Crossties required shall be of the type which are not:
(a) Broken through
(b) Split or otherwise impaired to the extent the crossties will allow the ballast to work through, or will not hold spikes or rail fasteners
(c) So deteriorated that the tie plate or base of rail can move laterally two inches relative to the crossties, or

(d) Cut by the tie plate (or rail base) through more than 15% (nominally 1-1/8") of a tie's thickness

(e) For track constructed without crossties, such as slab track, track connected directly to bridge structural components and track over servicing pits, the track structure must meet the requirements of 220 C.M.R. 151.09(3) in regards to gage restraint, rail support, surface and alignment.

(4) Gage is measured between the heads of the rails at right-angles to the rails in a plane 5/8 of an inch below the top of the rail head.

(5) Gage must be within the limits prescribed in the following table:

MAXIMUM TRACK SPEED	MINIMUM GAGE	MAXIMUM GAGE
10 miles per hour	56-1/8"	58"
50 miles per hour	56-1/8"	57-3/4"

(6) Each rail joint, insulated joint, and compromise joint must be of the proper design and dimensions for the rail on which it is applied.

(7) If a joint bar is cracked, broken, or because of wear allows excessive vertical movement of either rail when all the bolts are tight, it must be replaced.

(8) If a joint bar is cracked or broken between the middle two bolt holes it must be replaced.

(9) In the case of conventional jointed track, each rail must be bolted with at least one bolt for speeds up to ten mph, and with at least two bolts for speeds above ten mph.

(10) In the case of continuous welded rail track, each rail must be bolted with at least two bolts at each joint.

(11) Each joint bar must be held in position by track bolts tightened to allow the joint bar to firmly support the abutting rail ends and to allow longitudinal movement of the rail in the joint to accommodate expansion and contraction due to temperature variations.

Regulatory Authority: 220 C.M.R. 151.00, 49 U.S.C. 5330, 49 C.F.R. 659.